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COMPOSITIONS AND METHODS FOR THE PREPARATION OF COMPOSITE PHOTOCHROMIC POLYCARBONATE LENSES

Abstract

Photochromic matrix compositions and tie layer compositions useful for the preparation of photochromic polycarbonate lenses are disclosed. The tie layer compositions facilitate adhesion of the photochromic matrix composition to the polycarbonate lens. The photochromic matrix compositions can contain a flexible hydrophilic dimethacrylate monomer, one or more hydrophobic monomers, a flexible hydrophobic multi(meth)acrylate monomer, one or more urethane methacrylate oligomers, and one or more photochromic dyes. The tie layer compositions can contain one or more methacrylate monomers, a (meth)acrylated oligomer with a polycarbonate backbone, one or more urethane methacrylate oligomers, and a solvent or solvent mixture. Methods of preparing photochromic polycarbonate lenses are also disclosed, involving the serial application of the tie layer composition, then the photochromic matrix composition to the lens.